

REMARKS

Claims 112-117 are currently pending in this application. Claims 112-117 have been rejected. Claim 112 has been amended. The continued consideration of the pending claims is respectfully requested in light of this amendment and the following remarks. Applicants respectfully point out that the final Office Action by the Examiner presented some new arguments as to the application of the cited art against Applicant's invention. It is respectfully submitted that the entering of this Amendment would allow the Applicants to reply to the final rejections and to place the application in condition for allowance. Furthermore, Applicants submit that the entry of this amendment would place the application in better form for appeal, should the Examiner further dispute the patentability of the pending claims.

Informality Objection

The Examiner objected to claim 112 due to an informality regarding the missing indefinite article "a" between "comprising" and "polyvinyl alcohol." Claim 112 has been amended to address this objection. Thus, this amendment to claim 112 merely relates to form and neither constitutes new matter nor a narrowing amendment. Entry of this amendment is respectfully requested.

Double Patenting Rejection

The Examiner maintained the rejection of claims 112-117 under provisional obviousness-type double patenting over claims 1-5, 26-31, and 34-35 of co-pending

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Application No. 09/496,383. The Examiner has stated that a timely filed Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) may be used to overcome this rejection. Since no claim yet stands allowed, Applicants respectfully request that this rejection be held in abeyance until the indication of allowable subject matter. If the Examiner believes this application to be in condition for allowance, Applicants request that the Examiner please contact the undersigned regarding an appropriate resolution of this double patenting rejection.

Rejection under 35 U.S.C. § 103(a)

The Examiner continued the rejection of claims 112-117 under 35 U.S.C. § 103(a) as obvious over Smigo et al., U.S. Patent No. 5,281,307, in combination with Hollenberg et al., U.S. Patent No. 5,246,544. The Examiner asserts that Hollenberg et al. teaches the use of polymers containing functional groups such as hydroxyl and sulfate groups, thereby implying that a polymer containing any functional groups would be operable in the creping adhesive formulation disclosed therein. In addition, the Examiner suggests that Smigo et al. teaches the use of amine-functional polyvinyl alcohol polymers as additives in paper-making processes. Combining these two contentions, the Examiner states that it would have been obvious to one skilled in the art to use the polymers of Smigo et al. in the creping adhesive formulation of Hollenberg et al., thereby achieving the composition claimed in this application. Applicants respectfully traverse this rejection.

In order to establish a *prima facie* case of obviousness, the Examiner must prove the existence of three basic criteria: (1) some suggestion or motivation, either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings; (2) a reasonable expectation of success; and (3) the prior art references, either separately or when combined, must teach or suggest all the claim limitations. See MPEP § 2142.

Applicants herein assert that the Examiner has not met at least one of these three requirements.

Applicants submit that one of ordinary skill in the art would not be motivated to use the zirconium-containing crosslinking agent disclosed in Hollenberg et al. in the process of Smigo et al. There is no teaching or suggestion in Hollenberg et al. that zirconium-containing compounds can be used to crosslink an amine-containing moiety as disclosed and claimed herein by the Applicants. Therefore, Hollenberg et al. does not provide the motivation to employ a zirconium-containing compound as a crosslinker for the polyvinyl alcohol polymer in the process of Smigo et al.

For this same reason, it would not be obvious to one of ordinary skill in the art to employ a polyvinyl alcohol - vinyl amine polymer from Smigo et al. as the polymer used in the creping adhesive of Hollenberg et al. The Examiner recognizes that the polymers of Hollenberg et al. are "generic," but cannot rely upon this non-specificity to prove obviousness by combination with the specific compound disclosed by Smigo et al. "The test for an implicit showing is what the combined teachings, [the] knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365 (Fed. Cir. 2000).

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The Examiner's attention is also directed to *In re Jones*, 958 F.2d 347 (Fed. Cir. 1992). See MPEP § 2143.01. In *Jones*, the Federal Circuit found no suggestion to combine the cited references to form the claimed amine-substituted dicamba salt. The primary reference disclosed substituted salts of dicamba as herbicides, but did not specifically teach the claimed salt; the secondary reference disclosed the amine portion of the salt but was directed to a shampoo additive.

Similarly, in this case, according to the Examiner's rejection, the primary reference (Hollenberg et al.) teaches the use of substituted polymers as part of a creping adhesive. The secondary reference (Smigo et al.) teaches the use of a polyvinyl alcohol - vinyl amine co-polymer but is directed to a dry-end additive to paper. Even though Smigo et al. and Hollenberg et al. are admittedly directed to paper-making processes, there has been no showing by the Examiner that one skilled in the art, in an attempt to create a novel creping adhesive, would look to art like Smigo et al. that is clearly directed to a dry-end additive.

The Examiner cites *In re Kirkhoven*, 279 F.2d 274 (C.C.P.A. 1980), for the proposition that it would have been obvious to one of ordinary skill in the art to combine art, such as Hollenberg et al. and Smigo et al., because they allegedly teach compositions useful for the same purpose—the manufacture of paper-type products. *Kirkhoven* is distinguishable from this rejection, however, because its references involved the mixing together of two known conventional spray-dry detergents to prepare the claimed spray-dry detergent. See MPEP § 2144.06. In this rejection, however, the Examiner borrows a compound for a dry-end paper-enhancing additive for use in a

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creping adhesive formulation. The cited references here are not directed to the same subject matter, and therefore *In re Kirkhoven* is not applicable to the present rejection.

Because of this difference, this rejection is more analogous to *In re Geiger*, 815 F.2d 686 (Fed. Cir. 1987). See MPEP § 2144.06. In that case, the Federal Circuit rejected a *prima facie* case of obviousness for a composition used in a method for treating water cooling systems. One reference taught a method for treating water cooling systems but did not disclose the particular compound required by the claims at issue. Another reference taught the use of the claimed compound in a water cooling system, but as a treatment to solve a different problem. Thus, according to the Federal Circuit, no obviousness rejection could stand. On these facts, *In re Geiger* clearly supports the withdrawal of this rejection. While Hollenberg et al. teaches a creping adhesive formulation for use in paper-making, it does not disclose the use of a polyvinyl alcohol - vinyl amine co-polymer. Smigo et al. teaches such a compound for use in paper-making, but as a dry-end paper-enhancing additive, not as a component of a creping adhesive formulation. Therefore, the combination of Hollenberg et al. and Smigo et al. would not support a *prima facie* case of obviousness because, like *In re Geiger*, the secondary reference teaches the use of a compound missing from the primary reference, but as a component for a different part of the overall process.

In addition, Applicants further submit that the functional groups disclosed by Hollenberg et al. for its polymers, such as hydroxyl, carboxyl, sulfonate, sulfate, and phosphate, contain active hydrogens that are Brønsted acids. See col. 6, ln. 36-39. Smigo et al., however, discloses active amine moieties that are Lewis bases. Because of this acid-base distinction, Applicants submit that one of ordinary skill in the art would

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not be motivated to modify the teachings of Hollenberg et al., which discloses acidic functional groups, with the polymers containing basic functional groups of Smigo et al. As a result, for at least the reasons stated above, the Examiner has not proven that one of ordinary skill in the art would be motivated to combine Hollenberg et al. and Smigo et al. to achieve the crosslinkable creping adhesive formulation claimed in this application.

Furthermore, Hollenberg et al. does not suggest a reasonable expectation of success for any combination of the two references. There is no motivation in the prior art to combine Smigo et al. and Hollenberg et al., and certainly no indication that such a combination would have a reasonable expectation of success. In addition, according to *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991), the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not in the Applicant's disclosure. See MPEP § 2143. Because there is no suggestion to make and no reasonable expectation of success in making the combination in the prior art, Applicants submit that the first and second requirements of a *prima facie* case of obviousness have not been met.

Even assuming arguendo that one of ordinary skill in the art would be motivated to combine Hollenberg et al. with Smigo et al., this combination still would not result in the composition claimed in this application. The quantities of crosslinking agent disclosed in Smigo et al. are far too low to impart creping adhesive qualities to the disclosed composition. For example, at column 6, lines 17-20 and Examples 1-6 of Smigo et al., glyoxal is disclosed as the cross-linking agent at a maximum of 50 weight percent in the composition. In contrast, Table 8 on page 29 of the specification for this application discloses that much more glyoxal would be necessary to provide the

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desirable qualities of a creping adhesive. Therefore, the combination of Smigo et al. and Hollenberg et al. does not disclose, teach, or suggest a compound useful as the creping adhesive claimed in this application.

In this regard, claim 112 has been amended to clarify the nature of the Applicants' invention. This claim, the only independent claim pending in the application, now expressly recites that a sufficient amount of a crosslinking agent must be present in the creping adhesive composition to provide an adhesive useful for creping. Such a limitation was already inherent in the claim as it required the composition of a creping adhesive, and therefore inherently required sufficient amounts of all components be used to form the claimed creping adhesive. Therefore, the amendment merely recites this inherent limitation and constitutes neither the addition of new matter nor a narrowing amendment.

With this amendment, and in consideration of the remarks above, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn and submit that the claims are in condition for allowance.

Conclusion

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 112-117 in condition for allowance. Applicants submit that the proposed amendment of claim 112 does not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action

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by the Examiner. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and the continued examination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: June 4, 2003

By: 
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